which we think the most solid ones, and appear so to our sight, have notwithstanding abundance of those grosser kind of pores, which will admit several kinds of liquors into them, why should we not believe that Glass, and all other transparent bodies abound with them, since we have many other arguments, besides the propagation of light, which seem to argue for it?

And whereas it may be objected, that the propagation of light is no argument that there are those atomical pores in glass, since there are *Hypotheses* plausible enough to solve those *Phænomena*, by supposing the pulse onely to be communicated through the transparent body.

To this I answer, that that *Hypothesis* which the industrious *Moreanus* has publish'd about the slower motion of the end of a Ray in a denser *medium*, then in a more rare and thin, seems altogether unsufficient to solve abundance of *Phænomena*, of which this is not the least considerable, that it is impossible from that supposition, that any colours should be generated from the refraction of the Rays; for since by that *Hypothesis* the *undulating pulse* is always carried perpendicular, or at right angles with the Ray or Line of direction, it follows, that the stroke of the pulse of light, after it has been once or twice refracted (through a Prisme, for example) must affect the eye with the same kind of stroke as if it had not been refracted at all. Nor will it be enough for a Defendant of that *Hypothesis*, to say, that perhaps it is because the refractions have made the Rays more weak, for if so, then two refractions in the two parallel sides of a *Quadrangular Prisme* would produce colours, but we have no such *Phænomena* produc'd.

There are several Arguments that I could bring to evince that there are in all transparent bodies such atomical pores. And that there is such a fluid body as I am arguing for, which is the *medium*, or Instrument, by which the pulse of Light is convey'd from the *lucid body* to the enlightn'd. But that it being a digression from the Observations I was recording, about the Pores of *Kettering Stone*, it would be too much such, if I should protract it too long; and therefore I shall proceed to the next *Observation*.

Observ. XVI. *Of* Charcoal, *or burnt* Vegetables.

CHarcoal, or a Vegetable burnt black, affords an object no less pleasant than instructive; for if you take a small round Charcoal, and break it short with your fingers, you may perceive it to break with a very smooth and sleek surface, almost like the surface of black sealing Wax; this surface, if it be look'd on with an ordinary *Microscope*, does manifest abundance of those pores which are also visible to the eye in many kinds of *Wood*, rang'd round the pith, both a in kind of circular order, and a radiant one. Of these there are a multitude in the substance of the Coal, every where almost perforating and drilling it from end to end; by means

means of which, be the Coal never so long, you ma
it; and this you may presently find, by wetting one
and blowing at the other.

But this is not all, for besides those many great
gular spots or pores, if a better *Microscope* be made
pear an infinite company of exceedingly small, an
so thick and so orderly set, and so close to one an
very little room or space between them to be fill'd
the apparent *interstitia*, or separating sides of thes
some places, that the texture of a Honey-comb ca
Though this be not every where so, the inter
some places being very much thicker in proportion

Most of these small pores seem'd to be pretty ro
in rows that radiated from the pith to the bark
seem'd to be continued open pores, running the
Stick; and that they were all perforated, I try'd by
thin sliver of the Coal cross-ways, and then with m
ly surveying them against the light, for by that m
quite through them.

These pores were so exceeding small and thick, t
$\frac{1}{18}$ part of an Inch long, I found by numbring the
small pores; and therefore in a line of them an Inch
then 2700. pores, and in a circular *area* of an In
about 5725350. of the like pores; so that a Stick
may containe no less then seven hundred and twen
sides 5 Millions of pores, which would, I doubt not,
were not every one left to believe his own eyes. N
amin'd *Cocus*, *black and green Ebony*, *Lignum Vitæ*,
these Woods have their pores, abundantly smaller t
Wood; in so much, that those of *Guajacum* seem'd
part of the bigness of the pores of Beech, but then
thicker; so prodigiously curious are the contrivance
which the *Succus nutritius*, or Juyce of a Vegetab
place to place.

This *Observation* seems to afford us the true re
nomena of Coals; as

First, why they look black; and for this we nee
the *Scheme*, for certainly, a body that has so many p
cover'd to have, from each of which no light is reflec
look black, especially, when the pores are somewha
on to the intervals then they are cut in the *Scheme*,
else but a privation of Light, or a want of reflectio
this reflecting quality is deficient, there does that p
ther it be from a porousness of the body, as in this Insta
and dulling quality, such as I have observ'd in the
Silver, Copper, *&c.*

Next, we may also as plainly see the reason of its

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